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(54) **Process for the production of acetic acid**

(57) A process for the production of acetic acid by reacting carbon monoxide with methanol and/or a reactive derivative thereof in a liquid reaction composition comprising an iridium carbonylation catalyst, methyl iodide, methyl acetate, water and acetic acid character-

ised in that there is also present in the reaction composition a monodentate phosphine oxide compound in an amount of up to and including 200 mol per gram atom of iridium.

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## EUROPEAN SEARCH REPORT

Application Number  
EP 00 30 9646

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
D, X	US 5 817 869 A (HALLINAN NOEL ET AL) 6 October 1998 (1998-10-06) * column 3, line 30 - column 5, line 20 *	7-9	C07C51/12 C07C53/08
D, X	EP 0 114 703 A (SHELL INT RESEARCH) 1 August 1984 (1984-08-01) * the whole document *	7-9	
D, A	EP 0 749 948 A (BP CHEM INT LTD) 27 December 1996 (1996-12-27) * the whole document *	1, 7	
A	US 4 414 160 A (ERPENBACH HEINZ ET AL) 8 November 1983 (1983-11-08) * abstract * * examples 4, 5 *	1, 7	
A	DATABASE WPI Section Ch, Week 197823 Derwent Publications Ltd., London, GB; Class E16, AN 1978-50693A XP002221883 & JP 53 063308 A (MITSUBISHI GAS CHEM IND CO LTD), 6 June 1978 (1978-06-06) * abstract *	1, 7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			C07C
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>21 November 2002</b>	Examiner <b>Delanghe, P</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>1 : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

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The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-11-2002

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5817869	A	06-10-1998	EP 0957077 A1	17-11-1999
			US 6031129 A	29-02-2000
EP 0114703	A	01-08-1984	AU 569584 B2	11-02-1988
			AU 2369184 A	26-07-1984
			CA 1218999 A1	10-03-1987
			DE 3460967 D1	20-11-1986
			EP 0114703 A1	01-08-1984
			JP 59139340 A	10-08-1984
EP 0749948	A	27-12-1996	AT 194825 T	15-08-2000
			AT 212970 T	15-02-2002
			BR 9602849 A	28-04-1998
			BR 9602850 A	28-04-1998
			CA 2175028 A1	22-12-1996
			CA 2175031 A1	22-12-1996
			CN 1139097 A , B	01-01-1997
			CN 1141910 A	05-02-1997
			DE 69609381 D1	24-08-2000
			DE 69609381 T2	28-12-2000
			DE 69619030 D1	21-03-2002
			DE 69619030 T2	27-06-2002
			EP 0749948 A1	27-12-1996
			EP 0752406 A1	08-01-1997
			JP 9002992 A	07-01-1997
			JP 9002993 A	07-01-1997
			NO 961722 A	23-12-1996
			NO 961723 A	23-12-1996
			NZ 286473 A	24-06-1997
			NZ 286474 A	26-05-1997
			RU 2167850 C2	27-05-2001
			RU 2160248 C2	10-12-2000
			SG 48445 A1	17-04-1998
			SG 45474 A1	16-01-1998
			TW 396150 B	01-07-2000
			US 5696284 A	09-12-1997
			ZA 9603353 A	27-10-1997
			ZA 9603354 A	27-10-1997
US 4414160	A	08-11-1983	DE 3035201 A1	29-04-1982
			AT 4535 T	15-09-1983
			CA 1169876 A1	26-06-1984
			DE 3160822 D1	06-10-1983
			EP 0048335 A1	31-03-1982
			JP 1196386 C	12-03-1984
			JP 57082335 A	22-05-1982

EPO FORM P/41/95

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 9646

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-11-2002

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4414160	A		JP 58030292 B	28-06-1983
JP 53063308	A	06-06-1978	JP 959737 C	28-06-1979
			JP 53044449 B	29-11-1978

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82